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NOTES.

It is announced by the *Revue Philosophique*, Oct. 1890, that a Laboratory for Physiological Psychology under the direction of Sergi is to be opened at the University of Rome.

In the *Vierteljahrssch. f. wiss. Philos.*, XIV., (1890), 1, M. Radakovic makes a careful study of the fundamental assumptions of Fechner's logarithmic formulæ for the relation of intensity of stimulus to intensity of sensation, and endeavors to re-deduce it in a way less open to criticism.

G. Itelson, in an article entitled *Zur Geschichte des psycho-physischen Problems*, *Arch. f. Gesch. d. Philos.*, III, 1890, 282, concludes from the negative assertions of past philosophers that there is need of a critical determination of whether or not sensations are measurable. In reviewing his article in the *Zeitsch. f. Psych.*, I, 128, Prof. Ebbinghaus reminds him that Comte's assertion in 1834 that the chemistry of the stars would never be known, was by 1860 a wholly antiquated and unfruitful speculation.

On the new façade of the cathedral at Florence is a white marble balustrade through the decorative openings in which one can look eastward against the blue sky. When one looks at these openings in the afternoon, with the sunlight on the surrounding marble and the sky a deep blue, they appear, says Prompt (*Archives de physiol.*, 1890, No. I, p. 59), not as openings but as if filled with a blue mosaic; there is no separation of the sky from the balustrade. When one looks in the morning, with the eastern sky bright and pale and the surrounding marble in shadow, there is no such illusion. This observation falls in with the author's theory that by such differences in light and shade we perceive the relief of distant objects; we habitually locate dark figures on light ground in that ground, but light figures on dark ground apart from it.

In opposition to the theory that the lack of muscular co-ordination in ataxy is due to the lack of normal sensations from the joints, tendons, etc., of the limbs affected, Rumpf urges (*Deutsch. Arch. f. klin. Med.*, XLVI, p. 35) that cases of severe sensory disturbance are not always attended by ataxy. A normal person, writing with closed eyes, writes as usual; a patient with reduced sensibility in his hand and arm writes larger under those circumstances; an ataxic patient shows his inco-ordination. The first, he explains, simply shifts from ocular control to control by the sensations from the writing member; the second has to make greater movements to get recognizable sensations, but need show no ataxy.

The editors of the new *Zeitschrift für Psychologie* are most fortunate in being able to secure for their review department abstracts of important papers by the writers of them. In the second number, Oehrwall, of Upsala, gives the outline of his researches on the sense of taste (see note below epitomizing this abstract), and Goldscheider resumé's two of his papers on muscle-sense, some of the points of which have already been noticed in this JOURNAL. In the third number Preyer treats similarly of the new edition of his *Die Seele des Kindes*, Gaule of his counting

of the fibres in the spinal cord of the frog, and Kronthal of his note in the *Neurolog. Centralbl.* on the large cells of the anterior horns. Other things being equal, no one is so well able to present the salient points of his paper as the author of it. In this day of multiplied and elaborate research there is much propriety in an author's thus furnishing for hurried workers in other departments an authoritative statement of his results.

A magnificent experiment in the psychology of courage will be tried when the new long range guns and smokeless powder are first brought into actual use on the battle-field. The problem was thus stated by a writer in the New York *Evening Post*, some time since: "Will the soldiers' morale stand the comparatively normal atmosphere of future battle-fields? Without forcing the note, as some writers do who speak of a verdant country where no noise is heard, where nothing stirs, but out of which death is belched through invisible cannon and guns (simple physical laws are opposed to this uncanny conception of a silence so deep and invisibility so complete), it must be granted that with shooting at long range there will be perplexity in the apparent emptiness of the field. This uncertainty will have limits; but to what extent the soldier's nerves will be tried when, the stimulating excitement of smoke and noise failing, he will be more keenly alive to the horrors of the battle, is a question that without actual experience no knowledge of humanity can answer."

After canvassing former analyses of the sensations of taste, Oehrwall (*Skandinav. Archiv f. Physiol.* Bd. II. (1890) S. 1-69) ranges himself with those that find only four tastes, to wit: bitter, sweet, salt, sour. Between these there are no transitions; nor can a mixture of them, like a mixture of colored lights, give rise to a new inseparable sensation; nor are there contrast or compensation phenomena to be found among them. These four are as distinctly different senses as those of heat, cold, and pressure, the independence of which is becoming generally recognized. This view is supported by the facts that the same substance may excite different taste sensations, as it is applied to the tip or back of the tongue; and that the reaction-time for bitter at the tip of the tongue is longer than for the other three. The electrical taste, which has given trouble to the physiologists, is explained as due to stimulation of special end organs in the tongue and not, as Hermann contended, to action upon the nerve fibres and their sheaths. Cocain applied to the tongue abolished both normal and electrical taste sensations, but not those of temperature. The major part of the paper is devoted to Oehrwall's own experiments. After the manner of Blix and others, in studying the hot and cold spots, he has studied the isolated papillæ on the tip and sides of the tongue, using a fine brush dipped in tastable solutions. He got no taste sensations from the filiform papillæ, but unmistakable ones generally from the fungiform. Of 125 papillæ examined, 27 responded neither to sour (*Weinsäure* of 2-5 per cent. strength), bitter (quinine, 2 per cent.), nor sweet (sugar, 40 per cent.) Of the remaining 98, 60 responded to sour, bitter and sweet. Of the rest some responded to sour and sweet, but not bitter; some sour and bitter, but not sweet; and still others to sweet, but not sour or bitter; and so on. All the papillæ were sensitive to contact and temperature; the order of sensations being first, contact, at the same instant, or immediately after, cold, then taste. When mixed sugar and quinine were used the sugar was tasted first. Electrical stimulation of single papillæ with a weak induction current called out tactual and temperature sensations and generally also those of taste; most frequently sour, but also sweet and bitter. With the constant current the positive pole was most effective, bringing out a sour taste with a sensation of heat.

The negative pole excited chiefly sweet and bitter sensations, with that of heat, and sometimes at the same time that of cold. Weak currents brought out only such taste sensations as were to be gotten in the ordinary way. The author considers that these results are only to be explained by the presence of special end-organs differently distributed to the different papillæ. This brings the sense of taste into line under the general law of the specific energy of nerves.

In the spring of 1885 Goldscheider and Schmidt made experiments on the sense of taste, but being prevented from completing them made no announcement of their results till moved to do so by the appearance of Oehrwall's work. Their experiments were made in much the same way as his and though less extended lead to similar results and have a corroborative value. Their results are briefly set forth in the *Centralbl. f. Physiol.* Bd. IV, S. 10—12, April, 1890. They found evidence, among other things, for a fatigue of the taste organs (a point not recorded by Oehrwall), as follows: after several applications of quinine to a circumvallate papilla, the bitter taste failed though the papilla responded to sweet; after the use of acetic acid the taste was equally dulled for all four stimuli. In many subjects the only taste sensation excited on the hard and soft palates, especially near the middle line, was that of sweet.

The mysterious case of Caspar Hauser never came to trial, but the Polish newspapers have this spring contained an account of the trial and acquittal of a Polish nobleman, Count Zoroboff, who was charged with sequestering four children and rearing them as animals. It is said that the children were purchased of their poor parents. It would appear, if the meagre accounts at hand are reliable, that they came from four different families, had been dowered for life by the count, had been confined each in a large well lighted and heated and ventilated room, well fed, and occasionally washed by a deaf mute; that they were undressed, never punished or restrained in any act; that two of the children have been confined thus three, one four, and one four and a half years. The defense of the count was that he was conducting a scientific experiment to learn what were the natural instincts and the intuitions really innate in the human species. The count was acquitted. The age of the children is not reported. They did not speak, and made barking, growling noises, and precipitated themselves upon their food like animals. (See Emile Cere, *Revue Internationale de l'Enseignement des Sourds-Muets*, Mars, 1890.)

The following experience, related at first hand in a private letter to the editor, lacks the objective character of a full hallucination, but may perhaps be an interesting intermediate between ordinary experience and those rarer cases aimed at by the Census of Hallucinations of which Prof. James has charge for this country.

"From a youth up I have been subject to impressions more or less distinct and vivid, which seemed to come to me as if from some influence outside of myself. Most generally these impressions would come in a form of words as if a voice spoke them to me. But I have never once thought I had heard an *actual voice*. However vivid and distinct the impression of an utterance of words might be, it was always an inward voice, heard only in the mind.

"The most remarkable instance of the kind I ever experienced took place quite a number of years ago. But the whole incident was so peculiar that every incident of it is just as distinct in my mind as if it were only yesterday.

"I was going away from home to be gone two or three days, and it was very desirable that I should see a certain man before I went. But my time was limited, as my business had detained me so late in the

forenoon that it would only be possible for me to take the one o'clock train if I used all diligence in getting ready. So it was out of the question for me to think of calling at his house to see him. In the meantime, while I was shaving myself at the mirror in the back part of the kitchen, and inwardly fretting to myself that I must go away without seeing him, these words were distinctly spoken to my mind, 'You will have a chance to see Brother M. before you go, after all.' I smiled to myself, for the impression could not have been any more vivid that something outside of myself had addressed those words to me, if the same words had actually been spoken to me by some person in the room with me. It was also quite improbable that I should see him at that hour as he was generally quite prompt at his dinner, and it was then a full half hour past his time. While these things were revolving in my mind, the words came to me: 'If you will go to the door you will see him.' But the whole thing seemed so curious as well as incredible that I did not at once go to the door; and in a moment more the words came: 'Be quick! or you will miss him.' Of course I delayed no longer but started for the door, and, as I opened it, Brother M. was at that instant passing the front gate. He had been detained at his office and was going home to a late dinner. Such are briefly the facts."

W. W. C.